Claim 1 requires "a capacitance structure having known capacitance and configured so as to be serially connectable to the first MIS structure; and a measuring section for measuring synthesis capacitance of the serially-connected first MIS structure and capacitance structure." For example, Fig. 1 of the instant application illustrates that capacitance structure 1 with a known capacitance C1 and MIS structure 2 to be measured are *serially connected* to one another; and the LCR meter 3 functions as a measuring section in order to measure synthesis capacitance of the *serial connected* structures 2 and 3. The cited art fails to disclose or suggest at least the aforesaid underlined aspects of claim 1.

In contrast to claim 1, JP 6-112289 discloses a *non-contact* type analyzer where the analyzer is spaced apart from the structure to be analyzed. Due to the non-contact relation required by the reference, JP 6-112289 cannot possibly disclose or suggest the "serially-connected" aspect of claim 1. In this regard, Figs. 3 and 5 of JP 6-112289 clearly illustrate an air gap G between the MAIS and the measuring device, which prevents the serial connection required by claim 1.

JP 6-112289, and the problems associated therewith, are discussed on pages 5-7 of the instant specification. The primary problem with JP 6-112289 stems from the fact that is requires measurement of an insulator in a *non-contacting* relation (see pg. 5, line 16 to pg. 6, line 5 of the instant specification). In other words, there is a space (air gap with a capacitance C_{air}) between the contactless measuring device of JP 6-112289 and the insulator to be measured (so there can be no serial connection as required in claim 1). This non-contacting requirement of JP 6-112289 is problematic in that it causes errors to

occur because the precise spacing required between the measuring device and the insulator cannot be sufficiently controlled and dust therebetween may even lead to short-circuiting in certain instances (e.g., pg. 6, line 12, to pg. 7, line 8, of the instant specification). Another significant problem with JP 6-112289 is that its non-contacting measuring device can only be used immediately after the insulator has been formed (*before* the metal has been formed thereover to form the MIS) – this prevents the device of JP 6-112289 from being efficiently used to analyze boron punch-through which is a significant need in the art (e.g., pg. 7, lines 8-15, of the instant specification). Accordingly, the contactless requirement (non-serial) of JP 6-112289 leads to many problems.

In contrast with JP 6-112289, the invention of claim 1 uses a *serial connection* between a capacitance structure of the measuring device and the MIS to be measured. This is highly advantageous in that it allows a MIS structure to be measured (after the metal has been formed over the insulator) so that boron punch-through can be analyzed (e.g., pg. 18, lines 9-20, of the instant specification). The short-circuiting problem of JP 6-112289 may also be overcome.

According, it can be seen that JP 6-112289 fails to disclose or suggest the "serially-connected" aspect of claim 1. Instead, the reference teaches directly away from this by requiring a contactless relation. Claim 1 is not anticipated, and the reference is entirely unrelated to the invention thereof.

To the extent that the Examiner contends that the air gap C_{air} in JP 6-112289 represents a "serial connection" as required by claim 1, such an interpretation of the claim language is clearly not reasonable and cannot be maintained.

Also, JP 6-112289 discloses analyzing a Metal/Air/Insulator/Semiconductor (MAIS) structure – but not a MIS structure. In this respect, JP 6-112289 measures a MAIS, and then uses these measurements to approximate what characteristics would be of a MIS structure. Accordingly, it can be seen that, contrary to claim 1, the device of the reference is not for analyzing C-V characteristics of a MIS structure having unknown capacitance.

Claims 7 and 8

Claim 7 also calls for analyzing characteristics of a MIS structure, and requires serially connecting the first MIS structure to a capacitance structure. Again, JP 6-112289 fails to disclose or suggest these aspects of claim 7.

Claim 8 requires an "insulator capacitance analyzer for analyzing C-V characteristics of a first MIS (Metal/Insulator/Semiconductor) structure, comprising: a capacitance structure having a known capacitance and serially connected to the first MIS structure; and a measuring section for measuring a synthesis capacitance of the serially-connected first MIS structure and the capacitance structure." Again, JP 6-112289 fails to disclose or suggest these underlined aspects of claim 8.

Conclusion

For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

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